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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/435,020 11/05/99 BRUNELLI

E 2746-012

EXAMINER

MMC2/0607

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FRANKLIN, J

ART UNIT

PAPER NUMBER

2876

DATE MAILED:

06/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/435,020

Applicant(s)

BRUNELLI ET AL.

Examiner

Jamara A. Franklin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 19 is/are rejected.
- 7) ☒ Claim(s) 14-18 is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (US 5,854,478) (hereinafter referred to as 'Liu') in view Yoshida (US 5,408,543).

Liu teaches a captured bar code image and the method of determining the location and compensating for distortion of the symbol so that the symbol may be readily decoded (col. 5, lines 37-41). The image is referenced by a Cartesian coordinate system so that the location of each pixel is represented by a pair of numbers indicating the horizontal and vertical position of the pixel. Objects with the image can be arithmetically determined using known geometric and trigonometric properties based on the coordinate system (col. 6, line 56- col. 7, line 8). The amount or intensity of light impinging upon a particular pixel element is determined by the analog signal of the image upon an imager (col. 4, line 65-col. 5, line 4).

Liu lacks the teaching of a grid.

Yoshida teaches intersecting lines forming a rectangular grid laying over mark areas (col. 7, lines 36-40). The lines intersect at the central point of each mark area (fig. 5).

One of ordinary skill in the art would have readily recognized that a grid lying over coordinate points helps to display the coordinate points in a manner that will make the points more readily recognizable and easier to locate since the grid acts as a guide of sorts. Therefore, it would have been obvious, at the time the invention was made, to modify the teachings of Liu with the grid as taught by Yoshida.

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6. Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu/Yoshida as applied to claim 1 above, and further in view of Fukuda et al. (US 5,631,457) (hereinafter referred to as 'Fukuda'). The teachings of Liu/Yoshida have been discussed above.

Liu/Yoshida lacks the teaching of determining the structure of the code.

Fukuda teaches determining a code size by determining the number of columns and row within the code by a scanning means (col. 7, lines 28 and 29).

One of ordinary skill in the art would have readily recognized that counting the number of rows and columns before generating a grid is beneficial since, once the size and shape of the code is recognized, a suitable grid may be created especially for the code. Therefore, it would have been obvious, at the time the invention was made, to modify the teachings of Liu/Yoshida with the teachings of determining code size as taught by Fukuda.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu/Yoshida as applied to claim 1 above, and further in view of Szeliski et al. (US 6,018,349) (hereinafter referred to as 'Szeliski'). The teachings of Liu/Yoshida have been discussed above.

Liu/Yoshida lack the teaching of geometrical transformation as a homograph.

Szeliski teaches a general homography transformation of an image (col. 21, lines 41-52).

One of ordinary skill in the art would have readily recognized that a homography transformation is merely a type of transformation to be utilized to help precisely and accurately transform the deformed image into one which may be decoded. Therefore, it would have been obvious, at the time the invention was made, to modify the teachings of Liu/Yoshida with the homography transformation as taught by Szeliski.

Allowable Subject Matter

8. Claims 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the limitations citing acquiring coordinates of reference points of known position in said deformed image, selecting coordinates of predetermined points of said transformed image, and identifying said geometrical transformation transforming said reference points into said predetermined points and associating a brightness value of at least one characteristic point of said deformed image with a corresponding notable point of said transformed image reads over the art of record, either alone or in combination thereof.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Adachi (US 5,378,881) teaches a bar code reader for accurately reading two-dimensional bar code images.

Kafri (US 5,801,848) teaches a process for transmitting and/or storing information.

Liu (US 5,811,776) teaches a method and apparatus for accurately locating data regions in stored images of symbols.

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Sasaki et al. (US 5,825,947) teach an optical reproducing system for multimedia information recorded with code data having function for correcting image reading distortion.

Hara et al. (US 5,726,435) teach an optically readable two-dimensional code and method and apparatus using the same.


Zhou et al. (US 6,201,901) teach a border-less clock-free two-dimensional bar code and method for printing and reading the same.

Isaka (JP 63220381 A) teaches a bar code reader.

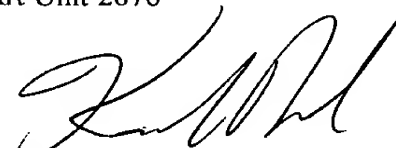
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamara A. Franklin whose telephone number is (703) 305-0128. The examiner can normally be reached on Monday through Friday 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703)308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Jamara A. Franklin
Examiner
Art Unit 2876

JAF
June 3, 2001


KARL D. FRECH
PRIMARY EXAMINER